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10/597,010

04/20/2007

Alexander Schnell

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EXAMINER

MEKHLIN, ELI S

ART UNIT

PAPER NUMBER

4191

NOTIFICATION DATE

DELIVERY MODE

12/15/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ACERMAK@CKVLaw.COM  
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PTADMIN@CKVLAW.COM

|                              |                                      |                                       |  |
|------------------------------|--------------------------------------|---------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/597,010 | <b>Applicant(s)</b><br>SCHNELL ET AL. |  |
|                              | <b>Examiner</b><br>ELI MEKHLIN       | <b>Art Unit</b><br>4191               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07.06.2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 5-11 is/are pending in the application.
- 4a) Of the above claim(s) 3-4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 5-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>July 13, 2006</u> .   | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. This is the first office action on the merits.
  2. Claims 3-4 were canceled in the preliminary amendment, filed July 6, 2006.
- Claims 1-2 and 5-11 are pending before the Office for review.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over STERN (U.S. Patent No. 4,507,264) in view of HASZ (U.S. Application No. 2005/0064220).

7. With respect to claim 1, STERN teaches a brazing alloy containing 12-14% chromium, 2-4% tantalum, 2.5-4% boron, 0.01% to 0.06% yttrium, and 2.5-5% aluminum. Abstract. The chromium and aluminum is greater than 15% of the alloy, the aluminum and tantalum are greater than 7.5% of the alloy and the chromium to aluminum ratio is greater than 3. Abstract. STERN does not teach that tungsten or cobalt can be included in the alloy. However, HASZ, which also deals with brazing alloys, teaches that tungsten, in a 4% weight concentration and cobalt in varying concentrations work effectively in brazing alloys. Page 3, Col. 1, Paragraphs 33 and 48. Additionally, although the percent weight amounts disclosed in STERN and HASZ are not identical to those claimed, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 105 USPQ 233 (CCPA 1955); MPEP 2144.05. "The normal desire of scientists or artisans to improve upon what is already known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages." *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969); MPEP 2144.05. Accordingly, a person having ordinary skill in the art, motivated by the teachings of HASZ and a desire to find the optimal

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ranges for the brazing alloy, would modify the percent weights of the elements previously disclosed to function effectively in such an alloy because doing so involves choosing from a finite number of identified, predictable solutions.

8. With respect to claim 6, modified STERN teaches that the braze disclosed in claim 1 can be used in the form of a paste to braze other materials. Col 6, Lines 1-8.

9. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over STERN as modified by HASZ, as applied to claims 1 and 6, and in further view of RENTERIA (U.S. Patent No. 6,968,991).

10. With respect to claim 2, modified STERN does not teach that the disclosed alloy can be used to braze nickel or cobalt based super alloy articles that have a polycrystalline, directionally solidified or single crystal super orientation. However, RENTERIA, which also deals with brazing alloys, teaches that brazing alloys with the composition disclosed in claim 1 are successfully used to braze nickel-based super alloys that are single-crystal or directionally oriented. Col. 1, Lines 13-20, Col. 4, Lines 55-63. Accordingly, a person having ordinary skill in the art would be motivated to use a brazing alloy of modified STERN, as taught by RENTERIA, because doing so simply involves the substitution of a known braze alloy for another to obtain predictable results.

11. With respect to claim 5, modified STERN teaches that the brazing alloy can be applied to nickel-based super alloy articles that are used in turbine components. Col. 1, Lines 32-33.

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12. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over STERN as modified by HASZ, as applied to claim 1, 2, 5 and 6 and in further view of SCHAEFER et al. (U.S. Patent No. 5,806,751).

13. With respect to claim 7, modified STERN does not teach that the braze alloy disclosed in claim 1 can be mixed with a nickel or cobalt alloy based filler material to produce a braze product. However, SCHAEFER teaches that it is known in the art to use a metallic alloy filler material to repair a metallic alloy article that has a composition similar to the brazing alloy. Col. 1, Lines 42-43. SCHAEFER also teaches that the metallic filler corresponds to that of the metallic alloy article or that the metallic filler and that the braze alloy have the same composition. Col. 2, Lines 21-22. Accordingly, a person having ordinary skill in the art would modify the braze paste disclosed in modified STERN to include a filler material comprising a nickel or cobalt super alloy because SCHAEFER teaches that this is an effective way to use a nickel-based cobalt containing alloy to create a braze product suitable for brazing.

14. With respect to claim 8, SCHAEFER teaches that the braze alloy, the second metallic filler material, is between 0-40% weight of the entire braze product. Col. 2, Lines 31-37. Where the claimed ranges overlap or lie inside ranges disclosed by the prior art, a *prima facie* case of obviousness exists. *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). Accordingly, a person having ordinary skill in the art would be motivated by SCHAEFER to adjust the percent-weight of the braze alloy in the braze product to a range between 0-40% because doing so simply involves choosing from a finite number of identified, predictable solutions.

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15. With respect to claim 11, modified STERN teaches that these brazing alloys can be used to treat nickel-based super alloy articles. Col. 1, Lines 32-33, Col. 2, Lines 1-6.

16. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over STERN as modified by HASZ and SCHAEFER, as applied to claim 7 and in further view of VAN ESCH (U.S. Patent No. 6,575,349) and RAFFERTY (U.S. Patent No. 6,612,480).

17. Modified STERN does not teach a brazing product in the form of a pre-sintered braze sheet that does not contain binder. However, VAN ESCH teaches that pre-sintered braze alloy products can be used in the same manner as regular braze alloy products and that the pre-sintered braze alloy renders binders unnecessary. Col. 1, Lines 62-64. RAFFERTY teaches that the use of pre-sintered pre-forms (sheets) for brazing is a highly effective way to repair metal parts on gas turbine engines. Col. 1, Lines 39-50. Accordingly, a person having ordinary skill in the art would use the alloy taught by modified STERN in the form of a braze product that is a pre-sintered sheet because as taught in RAFFERTY and VAN ESCH, such a sheet does not require a binder and is a proven and highly effective method for using a braze alloy to braze material.

18. Claim 10 is rejected under 35 U.S.C 103(a) as being unpatentable over STERN as modified by HASZ, as applied to claim 1 and in further view of DUTTON et al. (U.S. Patent No. 5,344,717) and HIRA et al. (U.S. Patent No. 5,340,015).

19. Modified STERN does not teach that the brazing alloy disclosed in claim 1 can be used in the form of a pure paste or foil in high temperature vacuum brazing. However, HIRA teaches that brazing material can be used as the pure alloy without filler

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to braze material. Col. 1, Lines 11-13, 26-31. However, HIRA does not require that the pure braze alloy be applied via high temperature vacuum brazing. However, DUTTON teaches that high temperature vacuum brazing is an effective way to braze material using a brazing paste. Col. 6, Lines 20-24. Accordingly, a person having ordinary skill in the art would modify STERN with the combined teachings of HIRA and DUTTON to create pure braze paste that can be applied via high temperature vacuum brazing because DUTTON and HIRA teach that this is a known, effective way to affect the brazing of two materials.

### ***Conclusion***

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELI MEKHLIN whose telephone number is (571)270-7597. The examiner can normally be reached on 5/4/9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Barbara Gilliam can be reached on 571-272-1330. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Eli S. Mekhlin

December 1, 2008

/Barbara L. Gilliam/  
Supervisory Patent Examiner, Art Unit 4191